

WHAT IS CLAIMED IS:

1. A positive electrode material powder for a lithium secondary battery containing either one of a Li-Ni-Co-O or Li-Ni-Co-Ba-O system component as a main component, wherein each particle which constitutes the powder has an amorphous phase of an oxide.

2. A positive electrode material powder for a lithium secondary battery according to claim 1, wherein the particle has the amorphous phase of the oxide dispersed within the particle.

3. A positive electrode material powder for a lithium secondary battery according to claim 1, wherein the particle has the amorphous phase of the oxide formed on a surface of the particle.

4. A positive electrode material powder for a lithium secondary battery according to claim 1, wherein the particle has the amorphous phase of the oxide dispersed within the particle and formed on a surface of the particle.

5. The positive electrode material powder for a lithium secondary battery of any one of claims 1 to 4, wherein a constituent component of the amorphous phase of the oxide is composed of an oxide of one or a plurality of elements selected from the group consisting of Li, Na, K, Si, Ba, B, P, and Al.

6. A positive electrode material powder for a lithium

secondary battery, which is a composite oxide powder having a total composition represented by $\text{Li}_a\text{Ni}_b\text{Co}_c\text{Ba}_d\text{M}_e\text{O}_x$ and each particle of which has an amorphous phase of an oxide where

M: one or a plurality of elements selected from the group consisting of Na, K, Si, B, P, and Al

$a/(b+c)$: 0.9 to 1.1

$b/(b+c)$: 0.5 to 0.95

$c/(b+c)$: 0.05 to 0.5

$d/(b+c)$: 0.0005 to 0.01

$e/(b+c)$: less than 0.01 (not inclusive of 0)

$b+c = 1$

x: not particularly specified.

7. A method for producing a positive electrode material for a lithium secondary battery, the method comprising:

mixing a component for forming an amorphous phase of an oxide which is composed of one or a plurality of elements selected from the group consisting of Li, Na, K, Si, Ba, B, P, and Al with a Li-Ni-Co-O or Li-Ni-Co-Ba-O system raw material, whereby consequently obtaining a mixture; and

firing the mixture.

8. A method for producing a positive electrode material for a lithium secondary battery, the method comprising:

firing a Li-Ni-Co-O or Li-Ni-Co-Ba-O system raw material; adding, to a powder resulting from the firing, a component

for forming an amorphous phase of an oxide which is composed of one or a plurality of elements selected from the group consisting of Li, Na, K, Si, Ba, B, P, and Al;

mixing the powder with the component whereby consequently obtaining a mixture; and

re-firing the mixture.

9. A method for producing a positive electrode material for a lithium secondary battery, the method comprising:

mixing a component for forming an amorphous phase of an oxide which is composed of one or a plurality of elements selected from the group consisting of Li, Na, K, Si, Ba, B, P, and Al with a Li-Ni-Co-O or Li-Ni-Co-Ba-O system raw material, whereby consequently obtaining a mixture;

firing the mixture;

further mixing, with the fired mixture, a component for forming an amorphous phase of an oxide which is composed of one or a plurality of elements selected from the group consisting of Li, Na, K, Si, Ba, B, P, and Al, whereby consequently obtaining a further mixture; and

re-firing the further mixture.

10. A lithium secondary battery having a positive electrode composed of the positive electrode material for a lithium secondary battery as recited in any one of claims 1 to 6.